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| Breakout 3: Proportional Reasoning, Responding to Students Over Time | | Grade: 5-8 |
| 75 min | Math Learning Goals   * Participants will focus on providing feedback to move towards the attainment of learning goals based on success criteria generated by big ideas, curriculum expectations, and learning goals. | Materials   * BLM 3.1 * BLM 3.2 * BLM 3.3 * BLM 3.4 * BLM 3.5 * Chart paper * Markers * PPT * Copies of curriculum documents * Video * Student samples * stickies |
|  | Pairs 🡪 Sorting Activity  Distribute copies of BLM 3.1 to participants. Have participants cut up the BLM into rectangles and organize/sort the statements. Have them discuss their reasoning.  Presents participants with a blank sorting template (BLM 3.2). Have participants respond to and discuss the following question.  Has the sorting template altered the organization of your statements?  Explain. | afl *Assessment* ***for*** *learning* |
| Minds On… |
| 10 min |
|  | Pairs🡪 Activity  Distribute copies of the Cookie Problem (BLM 3.3). Have them solve the problem on chart paper.  **Table Group 🡪 Discussion**  In their table groups, have the participants identify the overall expectation, the big idea, and the lesson of the Cookie Problem on the Posing Powerful Questions (PPQT) template (BLM 3.4).  **Whole Group 🡪 Discussion**  Have a representative from each table share their lesson goal for the Cookie Problem.  **Table Group 🡪 Discussion**  Have participants discuss what they think students would identify as success criteria for the Cookie Problem.  Show the video of students working on the Cookie Problem. Stop the video after the students have co-constructed the success criteria prior to solving the problem. Have participants compare/contrast their predictions with the success criteria the students co-constructed.  Continue with the video. Stop the video clip prior to students being asked to revise the success criteria they previously co-constructed    Have participants discuss what they think students would identify as success criteria now that they have had the opportunity to work through the problem.  Continue with the remainder of the video. At the end of the video have participants compare contrast their predictions with the revised success criteria.  View the video clip. Discuss responding in the moment versus responding over time.  Or…use the same problem with their samples, and what feedback would you give them over time…  When do you respond in the moment and when do you respond over time (use the video clip)  (if they hadn’t stopped and responded in the moment, then the girls might not have been able to move on)  **Pair Share 🡪 Activity**  Present pairs with 2 student samples and have them discuss the feedback they would provide to the students. Note the feedback on the stickies.  Each pair then takes one student sample and teams up with another pair. Participants share their student samples and the feedback they created.  aNote | afl *Assessment* ***for*** *learning*  afl *Assessment* ***for*** *learning* |
| Action! |
| 100 min |
|  | Small group🡪 Activity  Provide participants with the problem Which is closer to a ½ 3/8 or 4/10? How do you know.  Participants solve the problem in a number of ways.  Individual 🡪 Reflection    Participants will complete a “square/circle/triangle” exit card (BLM 3.5).  Square: something that is square in my mind  Circle: something that is going around in my head  Triangle: something that was pointed out |  |
| Consolidate Debrief |
| 10 min |
| Reflection | Home Activity or Further Classroom Consolidation  Have participants reflect on one of the following:   * the importance of developing guidelines for providing effective feedback * how does effective feedback impact student achievement * one change you will make when providing feedback to your students | aal *Assessment* ***as*** *learning* |

**BLM 3.1**

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| --- |
| Numbers are compared in many ways. Sometimes they are compared to each other; other times they are compared to benchmark numbers. |
| Represent ratios found in real-life contexts, using concrete materials, drawings, and standard fractional notation. |
| Represent the multiplication and division of fractions, using a variety of tools and strategies. |
| Students compare ratios in real-life contexts. |
| Students use the meaning of the operation to compare the sum to the product and the quotient to the difference of two fractions. |
| One group has 3 toddlers and 2 seniors. Another group has 4 toddlers and 3 seniors. Which group would you call “younger”? Why? |
| How do you know that must be less than  without doing any calculations? |

**BLM 3.2**

|  |  |  |
| --- | --- | --- |
| **Big Idea:** | | |
|  | **Junior** | **Intermediate** |
| **Curriculum**  **Expectations** |  |  |
| **Lesson**  **Goal** |  |  |
| **Consolidating**  **Question(s)** |  |  |

**BLM 3.3**

**Cookie Problem**

How much of each ingredient do you need for 15 dozen cookies?

**Cookie Recipe**

Ingredients for 6 dozen cookies:

cup butter

cup sugar

2 eggs

cup cream

1 tsp vanilla

1 cup flour

3 cups oatmeal

2 tsp baking powder

1 tsp salt

1 tsp cinnamon

1 cup chocolate chips

**BLM 3.4**

**Posing Powerful Questions**

**Lesson Title : Cookie Problem Grade/Program: 5-8**

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| **Goals(s) for a Specific Lesson**  *Use the stem “Students will:”* |
| **Curriculum Expectations**  *Highlight parts to be addressed in the lesson (may not be all parts)* |
| **Big Idea(s) Addressed by the Expectations** |

**BLM 3.4**

**Exit Card**

Something that is square in my head...

Something that is going around in my head…

Something that was pointed out...

**Exit Card**

Something that is square in my head...

Something that is going around in my head…

Something that was pointed out...